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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/572,977

05/08/2006

Matti Hietaniemi

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EXAMINER

HUG, ERIC J

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/572,977	<b>Applicant(s)</b> HIETANIEMI ET AL.	
	<b>Examiner</b> Eric Hug	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 11-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/22/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 11, 15, 16, 18, 19, 21, and 23 are rejected under 35 U.S.C. 102(a) as being anticipated by Hietaniemi et al (WO 03/104548). The publication date of this reference precedes the PCT filing date of September 20, 2004 for the present application. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Hietaniemi discloses a short circulation loop of a paper making machine comprising means for fractionation of stock. The fractionation provides stock for forming a multi-layer web. A first stock fraction comprising fine material is delivered to the outer layers of a multi-layer headbox. This first stock fraction is the accept fraction from a first hydrocyclone stage. A second stock fraction comprising coarser material is delivered to the middle layer. This second stock fraction is the accept fraction of a second hydrocyclone stage using the reject fraction from the first hydrocyclone stage. Prior to fractionation in the first hydrocyclone stage, stock 13 is diluted using tail water 12 from wire pit 11. After fractionation in the first hydrocyclone stage, the accept stream 17 (first stock fraction) is screened and passed to the outer layers J1 and J3 of multi-layer headbox 100 (see Figure 2). The reject stream of the first hydrocyclone stage 16 is

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passed to the second hydrocyclone. The accept stream 20 of the second hydrocyclone is screened and passed to middle layer J2 of the multi-layer headbox. Prior to the second hydrocyclone, stream 16 is passed to line 18 and supplied with dilution water (lv). See page 8, lines 15-17. It is presumed that this dilution water constitutes clean water, because it is not directly from the wire pit. Thus, the second stock fraction is diluted with dilution water having a lower consistency than the tail water.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11, 12, and 15-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohtala (WO 01/29311) in view of Huovila et al (US 6,210,535).

Kohtala discloses a method of making a multi-layer paper on a paper making machine using a fractionated stock. A first stock fraction (D) comprising short fibers and fines is delivered to the outer layers of a multi-layer headbox. This first stock fraction is the accept fraction from a first fractionation stage. A second stock fraction (B) comprising long fibers and fewer fines is delivered to the middle layer. This second stock fraction is the accept fraction of a second fractionation stage using the reject fraction from the first fractionation stage. Fractionation may take place by screens (Fig. 1) or by centrifugal cleaners (Figs. 2 and 3). Prior to fractionation in the first fractionation stage, stock is diluted using water from the wire pit. The

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first stock fraction (D) is screened and passed to the outer layers 4a and 4c of multi-layer headbox 4. The reject stream of the first hydrocyclone stage 16 is passed to the second hydrocyclone. The second stock fraction (B) is screened and passed to middle layer 4b of the multi-layer headbox. With respect to claims 11 and 21, Kohtala reads on all the features, except that Kohtala does not disclose diluting the second stock fraction with a dilution water having a consistency lower than that of the water from the wire pit (tail water).

Huovila discloses a stock feed system for a multi-layer headbox. In Figure 1, line 18a containing stock M from tank 17 has been separated into two stock lines 18a2 and 18a3. The stock in line 18a2 is split into two lines and eventually passed as stocks M1 and M3 to the outer layers of the headbox. The stock in line 18a3 is eventually passed as stock M2 to the middle layer of the headbox. Each stock is passed to a screen 20a1, 20a2, 20a3. At the front side of the screens, dilution water is provided at 100a1, 100a2, 100a3. The desired consistency for each stock can be obtained by providing a desired amount of dilution water at these points. Dilution water can be clean water. See column 4, lines 13-38. Thus, Huovila teaches providing stocks with a dilution water with a lower consistency than tail water.

Kohtala and Huovila are analogous in that they both produce a multi-layered paper utilizing one stock for the outer layers and another for the middle layer. Whereas Kohtala is concerned with a means of obtaining the two stocks, Huovila is concerned with means for delivering the two stocks to the headbox with independent control of the stock consistency for each layer. Thus, it would have been obvious to one skilled in the art to combine the stock fractionating system of Kohtala with the dilution system of Huovila in order to provide the desired stock types to the individual layers as taught by Kohtala with the desired consistency as

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taught by Huovila. Utilizing clean water as dilution water prior to the screens accomplishes the claimed dilution of the second stock fraction with a dilution water of lower consistency than tail water.

Regarding claims 12 and 22, clean water is deemed to be less than 60% of the consistency of tail water.

Regarding claim 15, Figure 2 shows the second stock fraction passing through a cleaner device along with dilution water from the wire pit.

Regarding claims 16 and 18, Figures 2 and 3 show fractionation of diluted thick stock into two fractions using centrifugal cleaners in two stages.

Regarding claim 17, Figure 1 shows fractionation by screens.

Regarding claims 19 and 23, the fractionated stocks are shown fed into a single headbox for forming a multi-layer web.

Regarding claim 20, Kohtala discloses that the use of separate headboxes for forming individual layers later combined together is known in the art as an alternative to a single, multi-layer headbox.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohtala (WO 01/29311) in view of Huovila et al (US 6,210,535) as applied to claim 11 above, and further in view of Smook (Handbook for Pulp and Paper Technologists, section 16.7).

Regarding the claimed sources of water, Smook, section 16.7, exemplifies known sources of recirculated water in a paper machine. These sources include press water, water from fiber recovery, water from flat suction boxes, and fresh water combined with any one or more of

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the sources. It would have been obvious to one skilled in the art to use any one of these sources of water in order to reduce the amount of fresh water used on the paper machine.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Begemann et al (US 5,639,349)

Begemann discloses in Figure 3 the wire water circulation of a paper machine with a triple-layer headbox. Two outer layers S1 of equivalent stock enclose an inner, lower-grade layer S2. Wire water taken from an upstream area is supplied to stock suspension S1 and a separate wire water taken downstream of the first dewatering area is supplied to stock suspension S2.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is (571) 272-1192.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Hug/  
Primary Examiner, Art Unit 1791